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ABSTRACT

The guidance component of Project Career is evaluated in this report in terms of project personnel, achievement of stated objectives, accomplishments, information dissemination, and cost effectiveness. (The goal of the guidance component was to field test occupationally validated behavioral objectives in a K-12 career development program.) Data was gathered from interviews with project, onsite, and subcontracted personnel, questionnaire surveys, review of documents, visitations, consultation with outside experts, and product evaluation. Activities conducted by project personnel at three pilot school systems are described, providing an overall view of project implementation. The report concludes that although the guidance component of Project CAREER was handicapped by the lack of complete data from the parent project with which to implement the guidance use intended by project objectives; it did succeed in developing and implementing at all levels, on a limited scale, a number of materials and activities relevant to the project and to the eventual availability of the Project CAREER data bank. Appended is a list of Project CAREER/Guidance presentations. (TA)

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PROJECT CAREER/GUIDANCE

FINAL EVALUATION REPORT

BY THE THIRD PARTY EVALUATOR

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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I. GENERAL INTRODUCTION

PROJECT CAREER (Computer Assisted Research for Educational Relevance) was funded for a three year period commencing July 1, 1971, and terminating June 30, 1974. The primary mission of this Project was "to establish a career development program which will facilitate the learning of marketable skills, basic educational concepts, knowledge, and attitudes required in current, new and emerging occupations by students at the elementary, secondary, post-secondary and adult education levels."[1]

During the first fiscal year of the Project two additional grant proposals were written and funded. PROJECT CAREER/GUIDANCE (OEG-0-72-4651) was funded from July 1, 1972, to November 30, 1973, with the termination date for final reporting purposes extended to June 30, 1974. PROJECT CAREER/HANDICAPPED (OEG-0-72-5170) was also funded from July 1, 1972 to June 30, 1974, with an extension for some final internal report writing through September, 1974.

PROJECT CAREER/GUIDANCE had as its goal, based on the knowledge base (a behavioral objective product) and capabilities of the parent project (now identified as PROJECT CAREER/DEVELOPMENT), to "develop, test and evaluate a new approach to providing students from levels K through post-secondary with better knowledge about the spectrum of occupational opportunities that really exist, information about the educational requirements which relate to them, and objective data on their own abilities and limitations in relation to the

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requirements of occupations of interest."[2]

CAREER/HANDICAPPED also was to draw on the data base developed by PROJECT CAREER/DEVELOPMENT and had as its goal, "meeting the individual needs of persons with physical, emotional and other disabilities, so that they can, insofar as they are able, have educational and occupational opportunities equal to those of students who are not handicapped."[3]

When NEESI, as the Third Party Evaluator, began the evaluation in January 1973, these three components constituted the totality of PROJECT CAREER and each component was dependent on the product development for the accomplishment of its mission in the testing or piloting phase.

In July 1973, a fourth component was funded as a separate grant under the title PROJECT CAREER/CAN (Career Analysis Network, OEG-73-2967) with funding providing for a twelve month period terminating on June 30, 1974. The goal of this project was centered on the development of information and delivery systems which would cut across grade lines and provide career information to students and teachers in grades K-14[4]. Data revealed, however, that no post-high school piloting was implemented in any phase of PROJECT CAREER. The structure of this additional component was intended to enable further development of the behavioral objective product to include four columns of curricular information and to absorb the ongoing pilot

activities that had been started under CAREER/GUIDANCE and CAREER/DEVELOPMENT.

Because the Third Party Evaluators were responsible for the evaluation of all three components of PROJECT CAREER as well as PROJECT CAREER/CAN, and because each was in some way dependent on the core Project, the separately reported Project components need to be set in this overall context. Some overlapping in these reports is inevitable, but the evaluators have made an effort to focus the final reports only on those aspects of the component being treated in each report.

This report is a summative evaluation of PROJECT CAREER/GUIDANCE covering the last eighteen month funding period and those additional activities that occurred during the six month extension of the Project. The report will describe and evaluate the results of the piloting activity of PROJECT CAREER data and related career education materials used in elementary classrooms and junior and senior high school guidance programs.

II. ABSTRACT

PROJECT CAREER/GUIDANCE was funded from July 1, 1972 to November 30, 1973. The goal of this Project was to field test the PROJECT CAREER product, occupationally validated behavioral objectives, in a coordinated K-12 career development program. The program was to stress career awareness at the elementary level, career exploration at the junior high level, and career decision making and placement at the senior high level. Materials and activities, based on PROJECT CAREER data, were to be developed for implementing this pilot project.

PERSONNEL

The major central staff personnel assigned to this Project included a Project Administrator, Mr. Roger Ritch, and a Project Coordinator, Mr. Gary Mandell. The responsibility of the latter was to coordinate the actual work of the personnel in the LEA's which consisted of approximately 30 teachers and guidance personnel in three school systems.

PROJECT IMPLEMENTATION

While the Project had clearly defined objectives, and implementation remained faithful to the thrust of these objectives, the initial failure of the parent project to provide the data to be tested meant that LEA personnel had to improvise their own materials.

There is no doubt that some administrative changes greatly impacted on these delays. Despite some false starts, confusion and frustration, a number of worthwhile and relevant materials and activities were finally developed over the life of the Project. Much of this work can be effectively integrated into the use of the PROJECT CAREER behavioral objectives despite the fact that the pilot was never an effective test of the use of these objectives in a career development program.

FINDINGS

1. Many valuable potentially transportable materials were developed at the Junior High and Senior High levels.
2. Little interface between the classroom skill development and the career decision making process was fully developed. This was primarily due to the lack of data enabling the skill development part of the pilot to make a fair test with enough students.
3. Materials and activities were developed that impacted on the facilitation of student placement. However, this objective was too far ahead of where the Project could go in the time it had and with the constraints placed on it by lack of data.
4. Many specific elements in the Project's objectives were completed in exemplary fashion.

RECOMMENDATIONS

In view of the above findings, the Third Party Evaluator recommends the following:

1. That any further pilot testing of guidance related objectives be established on a carefully articulated and coordinated K-12 basis within the same school system.
2. That a total, integrated, transportable model be developed for utilizing PROJECT CAREER data for career awareness and career development programs in school systems.
3. That further attention be given to the development of the model of computerized student inventory files, integrating classroom skill development with career decision making.
4. That the Project make a careful review and evaluation of all the activities and materials developed during the funding period, and identify those that are ready to be shared with other school systems, and those that warrant further development and implementation as part of a career guidance program.

CONCLUSION

This Project was handicapped by the failure of the parent project to produce enough complete data with which to implement the guidance use intended by the Project objectives. Despite this problem, the Project did succeed in developing and implementing on a limited scale a number of excellent materials and activities at all levels that were relevant to PROJECT CAREER and the eventual availability of the PROJECT CAREER data bank.

III. HISTORICAL HIGHLIGHTS

At the outset of this historical review, the evaluators would like to point out that the Project had two major development phases of about 18 months each. The Third Party Evaluator entered the Project as the second phase was beginning, at which time many serious problems had developed that placed the success of the Project in jeopardy. Many of the ensuing difficulties associated with the second 18 months of the Project, during which a new Director was in charge, were associated with the effort to cope with these earlier difficulties. The review that follows provides some of the details of these problems, as well as the successful developments that resulted from the total efforts of all those involved.

PROJECT CAREER/GUIDANCE (OEG-0-72-4651) was funded from July 1, 1972 to November 30, 1973. The long range goal of this Project was "to develop and demonstrate a coordinated set of processes by which students throughout the K-14 spectrum are provided with information about current, new and emerging occupations; prerequisite skills for them; realistic data concerning one's own aptitude and accomplishments in skills, units of knowledge, and related concepts; and the near-term and long-range opportunities realistically available."[5]

To accomplish this goal, teams of guidance and instructional personnel were organized in each of three pilot LEA's at the elementary, junior high school, and senior high school levels. These

personnel were to be "liaisons between PROJECT CAREER computer information, behavioral objectives, and the appropriate adjustment processes and procedures necessary to prepare the student for successful performance in the world of work."[6] In this connection, one of the major development items was to be a dynamic student inventory procedure that would identify the level of student development at any point in time.

Recognizing that the PROJECT CAREER data were entirely skill based for the selected occupations, CAREER/GUIDANCE also conceived of the need to "deal with the attitudinal qualifications and the personal attributes of successful job incumbents."[7] And at the elementary and middle school level, it was to be the task of CAREER/GUIDANCE "to convert specific skill analysis and world-of-work information into student centered career awareness and exploration activities."[8]

Cooperating pilot schools were selected for all pilot test components of PROJECT CAREER in the Spring of 1972. The pilot schools were chosen to represent a large urban system, a small suburban system, and a regional vocational-technical school system.

The first major event of the Project was a summer conference in July, 1972. By this time, the LEA's had identified personnel and coordinators who were to be involved in the Project and they gathered on the campus of a state college for an intensive one week orientation to PROJECT CAREER and specifically to CAREER/GUIDANCE.

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Since, at this point, the Project did not have any behavioral objective data to provide to the LEA's, the general thrust of this orientation was to encourage the LEA personnel to "do their own thing" with regard to developing materials and activities related to career awareness and career development. The Project was to provide some funds, some ideas, some supervisory support.

By the early Fall of 1972, however, the pressure was beginning to build up within the base Project to speed up the development of data. A decision was made to try to enlist the LEA personnel in the data development process as converters or writers of behavioral objectives. This was viewed by the LEA's as a "shift of direction" and created some confusion and bad feelings toward the Project.

When NEESI began making its first interviewing contacts with LEA personnel in March and April of 1973, the feedback indicated considerable dissatisfaction with PROJECT CAREER. Besides the confusion as to what was expected and what they were free to do on their own, there was fiscal confusion, delay in payments to LEA's, difficulty in getting equipment and materials approved for purchase, and other similar annoyances.

Despite these problems, however, the LEA personnel had, in fact, proceeded to develop a number of materials and activities at all levels that were in general keeping with the thrust of the Project. In addition, there was a growing awareness in the LEA's of the importance of, and need for, career education. Clearly the Project was a stimulus for the development of activities that would be responsive to this need.

In late June, 1973, a second two day conference was held, followed by a four week workshop based in the various LEA's. By this time, PROJECT CAREER had generated some BO data, some but not all of it, with completed four columns. The workshops were carefully structured to enable the accomplishment of specific objectives designed to elicit the output of some classroom and guidance materials specifically developed from the PROJECT CAREER data.

At the elementary level, these materials were to take the form of learning activity packages (LAP's) that could deal with skills, concepts, or simply occupational awareness activities. But the basis for these plans were to be drawn from the available data supplied by PROJECT CAREER.

The junior and senior high school components were to develop materials for use in conjunction with Career Information Centers (CIC's) located in the pilot schools. Specifically, these materials were designed to provide career exploration opportunities based on PROJECT CAREER data. At this level, a second major objective of each LEA was to develop a student inventory file that could be processed by the computer. The purpose of this file was to enable the student to keep a record of learning progress of the specific performance skills developed by PROJECT CAREER. Again, the intent was to link all these developments with the PROJECT CAREER data.

Following the end of the Summer 1973 workshops, the Project was to begin winding down with the termination scheduled for November, 1974. While in reality the 1973 Summer Workshop represented the

last major formal effort mounted by CAREER GUIDANCE, the intent was to have the plans of the summer workshops implemented in the classrooms and the CIC's during the following Fall. The Project did have sufficient momentum and funds to enable activities to continue through the school year to June, 1974. During this period, however, there was limited direction and inputs from the central staff and very limited amounts of additional data were sent to the LEA personnel.

IV. EVALUATION DESIGN

Designing the evaluation procedures for PROJECT CAREER involved the development of systematic information gathering procedures that would be a useful part of a viable ongoing formative evaluation of what was essentially a research development project. The Project goals were to develop a product, and to test the feasibility of its use in the school setting. Although there was an early implication in the Project's aims that a final possible outcome could take the form of student learning, in reality, the Project did not have this as its stated goal, nor did it come close to attaining this as an ultimate outcome. Thus, the outcome or summative evaluation was primarily limited to a study of the final product as it was developed. Part of the evaluation of the product would result from the experiences of potential users of the product as they tested it out in its early form in the classroom and through guidance activities.

INITIAL STUDY OF PROJECT CAREER/GUIDANCE

Since NEESI's Third Party Evaluation did not begin until half way through the life of the Project, the initial three month period was spent developing a thorough understanding of all aspects of the Project operations and the personnel that were involved. There was a need to prioritize information gathering procedures since time constraints necessitated the need of optimum time for evaluating the Project. Consequently, one aspect of the evaluation design was

to plan with the Project Director to identify, on a quarterly basis, major areas of concern that should receive particular attention from the evaluation team. As the evaluators became more familiar with the Project operations, however, they curtailed that particular use of time and implemented evaluation procedures based on their judgment as to what needed closer attention at any given point in the Project.

EVALUATION MILESTONE OBJECTIVES

Ultimately, a comprehensive evaluation design was developed based on the Cape Cod Milestone Objectives. These were largely process and product output objectives, but they provided a very systematic basis for information gathering. The nature of these objectives and the Project itself lent itself, in a great degree, to qualitative evaluation. Much of the quantitative outputs were in the form of cumulative counts. Since the Project was primarily developmental in nature, the evaluators strove for a design which insured the most systematic collection of information possible. At the same time, it was also necessary to insure that the information obtained could be reported in a form that would be most useful for positive, ongoing decision-making. Some of this information gathering took the form of ongoing consultation with members of the Project Staff. Eventually, the evaluation team developed a form of interim reporting in which full reports and shorter memos were prepared on specific aspects of the Project in order that this information would reach the Project soon enough to be of value.

As the evaluators began to submit quarterly and interim reports, there developed the opportunity for a kind of dialogue to take place between the Project and the evaluators in response to the formative recommendations that were made in those reports. This process, in turn, provided the source of needed follow up activities on the part of the evaluators as needed changes and modifications were identified. Information was continually sought from the Project as to whether changes had been made, were intended to be made or not, and for documentary evidence that changes had taken place.

INFORMATION GATHERING TECHNIQUES

Following is a listing of various information gathering techniques employed by the evaluators in implementing the general evaluation plan described above.

1. Interviews with key Project personnel
2. Interviews with LEA personnel on site
3. Interviews with sub-contracted personnel (e.g. converters, validators, coders, etc.)
4. Structured surveys or questionnaires of certain Project personnel
5. Inspection of documents, both internal, management documents and products and activities produced by the field testing
6. Consultation with outside experts
7. Product evaluation following standards established by instructional product design experts
8. On-site observation of field testing activities, workshops, conferences and personnel training sessions.

SUBMISSION OF INFORMATION

To provide for consistent and systematic feedback of this information to the Project, the evaluators submitted the following written documents:

1. Five written evaluation design proposals

2. Seven quarterly reports

3. Interim formative evaluation reports on the following aspects of PROJECT CAREER: a) two reports on validation; b) two reports on four column development; c) one report on general product development and packaging; d) one report on pilot activities; e) one product evaluation report

4. Whenever key Project central staff were inderviewed, memos summarizing the interviews and the understandings reached were sent to PROJECT CAREER within one week.

Some of the complexity of monitoring all the available sources of information about the Project can be appreciated by the fact that over the life of the Project there were close of four hundred (400) different persons involved in some aspect of the Project. Besides the basic full time Project staff based in the Randolph, MA headquarters, there was a large group of affiliated LEA personnel in over ten different schools, and there were all the sub-contracted personnel that performed the tasks of writing objectives, validating objectives, coding objectives, and writing four columns for the objectives. The evaluation team made an effort to have some contact, if only through a survey form, with all of these persons.

V. PROGRAM OBJECTIVES

In September, 1972, seven major program objectives were written for CAREER/GUIDANCE. These objectives were given further operational specification at a management conference in October, 1972 on Cape Cod, from which emerged the so-called "Cape Cod Milestone Objectives." In addition to these basic objectives, the Project developed more specific objectives that became available later in 1973 (the document was undated). These objectives provided a detailed basis for the final summative evaluative information gathering of the Third Party Evaluator.

STATED PROGRAM OBJECTIVES

We shall begin by presenting the seven basic objectives that marked the beginning of the Project and provide brief comments on the summative status of these objectives.

1. GIVEN VALIDATED PERFORMANCE OBJECTIVES DERIVED THROUGH AN ANALYSIS OF 75-100 SELECTED OCCUPATIONS, PROVIDE TEACHERS AND GUIDANCE STAFF COOPERATING WITH PROJECT CAREER WITH COMPUTER PRINTOUTS CONTAINING PERFORMANCE OBJECTIVES RELATED TO EACH OF THE OCCUPATIONS UNDER ANALYSIS AS WELL AS SKILLS COMMON, BETWEEN AND AMONG OCCUPATIONS.

This objective was the whole basis of PROJECT CAREER/GUIDANCE, so far as it concerned the pilot testing of their behavioral objective product. Having this information became the condition or "given" for each of the remaining objectives. Unfortunately, this objective was never met early enough or extensively enough to meet the conditions

for the remaining Project objectives. Computer printouts for each of the PROJECT CAREER BO's were never completed. The "commonality search" for skills common between and among occupations was never carried out and this information was never available. Varied numbers of BO's in a few occupations were provided. Some of these BO's were complete with four columns and some were not. For all practical purposes, even this limited data was not made available until June, 1973 for the summer workshops, one year after the Project began operating.

The Third Party Evaluators believe that it is important to note in the context of the evaluation of this specific component of PROJECT CAREER, that the objectives of this Project did not include the development of the data on which this Project depended. Nevertheless, this Project shared staff with the data development aspect of PROJECT CAREER. In relation to this objective, it is safe to say that the Project was implemented at least one year too soon.

2. GIVEN THE 75-100 OCCUPATIONS SELECTED FOR ANALYSIS IN ARRANGED AND REALISTIC OCCUPATIONAL CLUSTERS, ESTABLISH A PROGRAM IN THE ELEMENTARY GRADES, K-6 ON A PILOT BASIS WHICH IDENTIFIES AND INTEGRATED RELATED AND APPROPRIATE INFORMATION, GENERIC SKILLS AND CONCEPTS.

A pilot program, K-6 was established. The personnel in this program received some PROJECT CAREER BO's to work with in the summer of 1973, one year after the Project was started. Except for the fact

that the basic data from which this objective was to be derived never became available until late in the Project, our evaluative observations substantiated that the intent of the objective was attained. The quality of the pilot programs, or at least the pilot materials and activities that were developed, covered a range from poor to very good.

3. GIVEN AN ELEMENTARY GUIDANCE PROGRAM K-6 BASED UPON PROJECT CAREER'S ANALYSIS OF THE 75-100 OCCUPATIONS, DEVELOP MEANINGFUL HANDS-ON ACTIVITIES THAT BRING AN ACCURATE PRESENTATION OF THE WORLD-OF-WORK INTO THE ELEMENTARY CLASSROOM.

This objective was implemented and a variety of "hands-on activities" were developed. Otherwise, the comments given for #2 above apply here.

4. GIVEN CAREER AWARENESS MATERIALS DEVELOPED BY TEACHERS IN THE PILOT SCHOOL DISTRICTS, ESTABLISH PROGRAMS IN THE ELEMENTARY CLASSROOMS BY WHICH SUCH MATERIALS AND DEVELOPMENTAL PROCEDURES MAY BE TRANSPORTED WITHIN AND WITHOUT THE PILOT SCHOOL DISTRICTS.

In the judgment of NEESI's evaluators, the programs and materials developed in the pilot schools are not at a stage of development where they are very transportable. They clearly have the potential for transportability. However, very little sharing among the pilot schools took place during the pilot period. The absence of the PROJECT CAREER data during the first year of development also meant that the materials were not developed from a systematic

data base but were more random and individual in relation to the skills and interests of the teachers who developed the materials and programs.

5. GIVEN MEASURABLE SKILL DEVELOPMENT INFORMATION AND A VARIETY OF APPROPRIATE WORLD-OF-WORK MATERIALS, DESIGN A PROCESS AND PROVIDE THE SPACE BY WHICH TO ACCESS SUCH INFORMATION IN ORDER TO EXPLORE A WIDE VARIETY OF CAREER OPPORTUNITIES.

This objective called for the development of Career Information Centers. Each pilot school system did develop a CIC. With the help of PROJECT CAREER funds, they were able to identify space and purchase some equipment and materials. Development of a process for career exploration through these centers was not very advanced at the conclusion of the Project. But the model was there and the data would be available after the conclusion of the Project. More detailed observations on this and others of these objectives will be provided in the section on Findings and Recommendations.

6. GIVEN ACCESS TO SEVERAL K-14 EDUCATIONAL SYSTEMS (PILOT LEA) AS WELL AS POTENTIAL EMPLOYERS WITHIN THE 75-100 OCCUPATIONS UNDER ANALYSIS, DEVELOP PROGRAMS DESIGNED TO FACILITATE PLACEMENT OF A STUDENT IN AN ENTRY LEVEL JOB, AN ADVANCED SKILL DEVELOPMENT PROGRAM, OR AN APPROPRIATE BACCALAUREATE DEGREE GRANTING INSTITUTION.

NEESI's evaluators never received or uncovered any information that would substantiate that this objective was ever implemented in any pilot school. Because of the development lag noted above, there is no reason to expect that placement procedures could have been meaningfully developed in the context of this Project. The nature of this objective requires that it be implemented more as a last stage in the process of a systematic career development program. The earlier stages never reached a level of development that would have made implementing this objective possible during the effective life of the Project. Certainly, however, the potential for implementing this objective is still present in the pilot systems without the involvement of PROJECT CAREER.

7. GIVEN THE PREVIOUS SIX OBJECTIVES AND THE IMPLEMENTING ACTIVITIES TO BE PERFORMED, DEVELOP MECHANISMS FOR CONTINUOUS MONITORING OF PROJECT CAREER/GUIDANCE ACTIVITIES AND THEIR RELATION TO THE STATED OBJECTIVES.

This objective of internal evaluation of the Project was never effectively implemented. The Milestone Objectives did provide a means for monitoring the ongoing activities, but there was no systematic evaluation plan other than that provided by NEESI. Because of the initial handicaps from lack of data under which this Project labored, we doubt that the lack of systematic internal evaluation had a detrimental effect.

In many respects, the documentary materials available from the CAREER/GUIDANCE pilots having to do with Project objectives, deserve commendation. The evaluative activities of the Third Party Evaluators often revealed a picture of haphazard confusion at the time of data gathering that does not now appear to be true at the end of the Project. The major objectives detailed above were modified but never significantly altered from the original intent of the Project. In the section on Findings and Recommendations, we shall provide data that bears on some of those modified objectives.

SUMMARY

In summary, the Project and the Project Administrator always had a clear direction and well understood objectives. There was, at times, some failure to always communicate these directions clearly and forcefully to the LEA personnel, since CAREER/GUIDANCE was hampered from the beginning by the failure to have the promised data upon which all the main objectives were predicated. Yet, it is a tribute to Mr. Roger Ritch, the CAREER/GUIDANCE Administrator, Mr. Vincent Lamo, the PROJECT CAREER Administrator, the Central Staff and to the overall clarity of directions and objectives, that the LEA personnel finally accomplished as much as they did as well as they did.

VI. ADMINISTRATION AND PERSONNEL

The relationship of CAREER/GUIDANCE to the development of the basic PROJECT CAREER data, an occupationally validated skill objective, was reflected in the administrative staffing. Only two persons from the PROJECT CAREER Central Staff had designated responsibilities for CAREER/GUIDANCE. One of these, the Project Administrator, was not paid from CAREER/GUIDANCE funds. The other was designated as PROJECT CAREER/GUIDANCE Coordinator. All the remaining staff for this Project came from the LEA's.

PERSONNEL STAFFING

Mr. Roger Rtich, who joined PROJECT CAREER in August, 1971, was designated Project Administrator with 50% of his time assigned to the management of CAREER/GUIDANCE, with special responsibility for providing the interface between this Project and PROJECT CAREER, the source of the data development.

Mr. Gary Mandell was hired as the PROJECT CAREER/GUIDANCE Coordinator (PCGC). He had the requisite background of training and experience in the field of vocational guidance and teaching that was specified for this position. Mr. Mandell left the Project in December, 1973, after the official termination date, but before Project activity had actually ended.

Assessing the administrative operations associated with this Project is a difficult evaluative task. All the evaluative information we have bearing on this aspect of the Project is clearly

subjective in nature. The role of both administrators was complicated at the outset by the requirement that they devote some of their time to data development operations which were not part of the commitment of this Project, but upon which the implementation of Project objectives was based.

Personnel Involvement in PROJECT CAREER

Mr. Ritch was expected to devote 50% of his time to the management of this Project. Over the course of the first half of the Project, he probably devoted half or possibly more of his time to CAREER/GUIDANCE involvements. But during the last half of the Project, and particularly from September 1973 to the close of the Project, he was perhaps not giving more than 10% of his time to direct involvement with CAREER/GUIDANCE. These are estimations at best, due to the demand on his time from PROJECT CAREER.

Although not explicitly stated in the original proposal, it is implied that the PCGC would be a full time commitment to the Project. In any case, this did not turn out to be so in practice. While it is very difficult to estimate how much of Mr. Mandell's time was devoted strictly to CAREER/GUIDANCE, we do know that for at least six months before he left the Project he was heavily involved in the data generation process for PROJECT CAREER.

The lack of any full time attention from a Central Staff administrator to the LEA activities that were the key to CAREER/GUIDANCE, did have a detrimental effect on the relations between PROJECT CAREER and the LEA's.

RETROSPECTIVE
EVIDENCE

NEESI has a different view of the total effect of these problems at the end of the Project than they had during the ongoing evaluation. Retrospective evidence, including memos and other documents that were never brought to the attention of the evaluators at the time, suggest that Mr. Roger Ritch, the Project Administrator, always had a clear picture of the Project Objectives and worked very hard to communicate those objectives to the LEA's, including efforts to modify and adjust objectives to meet the needs and capabilities of the various LEA personnel.

Our conclusions on this aspect of the Project can best be summarized in these observations:

1. A tone of minimal centralized direction for the LEA's in this Project was established at the outset with the first summer conference and continued to be the general theme of PROJECT CAREER involvement throughout the Project. This did lead to considerable frustration and some confusion on the part of the LEA personnel. Through no fault of his own, Mr. Ritch perhaps at first became the target for much of this frustration.

2. One major reason for the above approach to this Project, was that the data on which the activities were to be based was never developed until it was too late to be of much significance to the LEA's. This meant that creativity, innovation, and individualized developments had to be encouraged by PROJECT CAREER.

3. There were, however, some restraints placed on this "do your own thing" approach and these were gradually spelled out as more specific objectives were developed. The development of these specific objectives, later tied directly to the disbursment of funds during the last twelve months of Project activity, was one of the major accomplishments of Mr. Ritch, Project Administrator. Unfortuneately, this process sometimes had the effect, from the point of view of the LEA's, of their being told to do their own thing, then told to pursue certain specific objectives in certain ways, then left to do this essentially on their own, and finally to be denied the data (or most of the data due to its unavailability) on which they were to base much of their activity. It is no wonder that the LEA's carried so much resentment toward PROJECT CAREER and surprising, in the face of this, that they accomplished so much so well.

Our conclusion from this is not that the Project was mismanaged, but that the timing of its introduction into the overall aims of PROJECT CAREER, through no fault of the administrators of either PROJECT CAREER or PROJECT CAREER/GUIDANCE, was so poor as to create an almost impossible management problem from the outset. Given this problem, we want to commend Mr. Roger Ritch and, indirectly the PROJECT CAREER Project Director, for their overall efforts in bringing this Project through as successfully as it was, and for producing the kinds of important materials which were eventually produced.

LEA PERSONNEL

Although, without the resources of the Project to help fund personnel and supply some materials, and without the overall direction and objectives set by the Project management, there could have been no useful outcomes, the fact remains that what was done in CAREER/GUIDANCE was accomplished through the efforts of the Project Administrators and the LEA personnel.

There were thirty (30) persons, teachers, and guidance personnel, involved in the three LEA's. There was some staff turnover during this period of time, especially the departure of two elementary guidance coordinators, that effectively ended the last year of involvement for the elementary programs in Springfield and Milford. Similar problems truncated the work in the Blue Hills Regional Vocational-Technical High School, and in the Randolph Junior High School.

Accomplishments of LEA Personnel

Despite these failures, CAREER/GUIDANCE programs were established with coordinators and staffs working, over the course of two school years, to establish career awareness, career exploration, and career skill programs, all leading to improved career decision making. As pointed out in a previous section, the impact on actual students cannot be measured at this time, but there was a clear impact on the schools and on the staff that were involved in the Project.

In reviewing the LEA Job Description for this Project, the evaluators concluded that they were quite realistic. The duties listed were in fact implemented. Furthermore, they were well conceived because the anticipated products were developed in a form that was relevant to the ultimate PROJECT CAREER product, and they specified a viable contract in advance between the field workers and CAREER/GUIDANCE.

VII. CHARACTERISTICS OF PILOT LEA'S

Pilot testing for PROJECT CAREER/GUIDANCE was to be carried out in three types of school systems to represent an urban, a comprehensive, and a regional vocational-technical system. Selected to match these characteristics were the city of Springfield, the town of Milford, and the Blue Hills Regional Vocational-Technical school system.

SPRINGFIELD

Springfield is characterized by its industrial environment and has a population of 164,000. Though Springfield has a substantial population of middle income families, more than 43% of the families have incomes of less than $6,000. At the time of their selection, the unemployment rate in Springfield was 7.3%. Welfare expenditures were almost double the school budget, and 23% of the children in the schools came from homes receiving Aid to Dependent Children.

The school system is organized on a K-6, 3-3 plan with 16,670 elementary and 13,600 secondary students housed in 36 elementary, 7 junior high and four senior high school buildings. The high school program is organized around four specialized schools in each of the following areas: classical, technical, commercial, and trade. In addition to its speciality, each school conducts a limited comprehensive program.

The Springfield School System has, for many years, operated a strong occupational education program, along traditional lines, in their Trade and Technical High Schools. However, in the Classical and Commerce High Schools, virtually no occupational preparation and/or counseling existed.

MILFORD

Milford is an expanding non-urban (or ex-urban) community with a population of about 20,000. Growth has come about from business relocations spurred by the excellent major roadway connections that have been built in recent years. The majority of families fall in the lower middle income bracket, with a median family income of just under $6,000.

The Milford school system's enrollment at the time of selection was 3,500 with 1000 students housed in a Senior High School that was originally constructed for a maximum population of 600. However, in the Fall of 1973, a new, ultra modern high school was opened with the intention of providing a strong occupational education component along with the offerings of a comprehensive high school.

BLUE HILLS
REGION

The Blue Hills Region consists of seven feeder towns for the regional vocational-technical high school. The intent of the Project was to select one feeder school and develop a model K-12 pilot program in career development. The feeder school system

that was selected was Randolph, a town with characteristics similar to Milford. In addition, another suburban feeder system, Braintree, was included in the pilot for activities at the elementary and junior high school levels.

STUDENTS

There was never any real selection of students to be involved in this pilot program, although the intent to select groups of students was implied in the original proposal. Instead, the students who were involved were essentially those students who were in the elementary classrooms of teachers who were selected for participation in the Project. At the junior and senior high school level, student involvement was an even more random process. Those students who were involved in PROJECT CAREER could be said to be those students who happened to make use of the Career Information Centers. Numbers cannot be pinned down, but it is safe to say that across the three LEA's the total number of students brought into direct contact with some phase of CAREER/GUIDANCE activity and/or materials would be at least 300.

In assessing the impact of the Project on students, the lack of any clearly defined group of students with whom activities were to be tested in some systematic way was detrimental to the pilot program. On the other hand, there were isolated instances where limited and controlled evaluations were made to measure the effectiveness of Project related materials.

At the high school level, there was an explicit intent to relate the piloting of guidance materials to the piloting of classroom instructional materials that were to be tested as another component of PROJECT CAREER. Scheduling problems prevented the systematic identification of a single group of experimental students, however, so that this group of students could not be systematically cycled through the guidance component either.

In summary, we can say that, insofar as a direct test of the impact of this Project on identifiable groups of students in the various LEA's was concerned, no meaningful data were ever collected by the Project.

VIII. GENERAL EVALUATIVE FINDINGS

The objectives of PROJECT CAREER/GUIDANCE essentially involved the development of materials, activities, equipment, and facility development that would, taken together, serve as a model career development program for grades K-12. These outputs were intended to be based on the PROJECT CAREER behavioral objectives. As has already been made clear in this report, the basis for the career development program was never developed in time to significantly impact the development of activities, materials, etc., so that the objectives had to be met in the absence of this data, but with the development of this data still in mind.

These findings can be presented in two general categories. First the description of some of the activities and services that were developed. Second, the description of facilities, equipment and materials. There are some obvious overlaps between the two areas. Finally, we plan to incorporate these findings in general statements of the summative status of PROJECT CAREER/GUIDANCE.

PROGRAM OBJECTIVES

In order for these findings to be more meaningfully integrated into the objectives of the Project, we shall list below for the elementary and junior-senior high components separately, the specific objectives that led to the activities, etc., which were evaluated as of the conclusion of the Project.

Elementary Career Awareness Objectives

1. Establish the means for identifying and integrating appropriate occupational information, generic skills, knowledges, and concepts basic to a wide range of clustered occupations, into the elementary grades.
2. Develop hands-on activities that bring an accurate representation of the world of work into the classroom through role playing, field trips, community resource people, and related subject matter.
3. Establish transportable models for the utilization and exploration by all teachers of the newly developed career awareness materials.
4. Encourage the student to evaluate self in relation to the world of work at large, his community and his own developing interests, attitudes and skills.

Objectives for Junior-Senior High School Career Exploration and Skill Development

1. Coordinate measurable skill development information in a wide variety of clustered occupations for student, counselor, parent and teacher usage.
2. Establish computer-assisted Career Information Centers.
3. Develop diagrams, maps and graphs of representative occupations showing minimum instructional competency levels and related occupational options.

4. Develop hands-on materials designed to assist career planning and decision making, such as performance objective outlines, that allow a student to manually plan and visually explore the instructional programs of choice from a broad area of instructional career options.
5. Design materials to facilitate the placement of an exiting student in an entry level job, an advanced skill development program, or an appropriate baccalaureate degree granting institution.
6. Encourage the student to evaluate self in relation to the world of work at large, his community and his own developing interests, attitudes and skills.

As is perhaps obvious, the implementation of very few, if any of these objectives, requires the PROJECT CAREER data bank. On the other hand, the availability of that data bank would clearly enhance the attainment of the objectives, and tie the process into a more systematic base. Inevitably, the results of this pilot effort can be seen to be rather fragmented and piecemeal even though the individual quality of much of the output was excellent.

ELEMENTARY CAREER AWARENESS ACTIVITIES

The majority of the accomplishments to be described below resulted from the 1973 Summer Workshop, and further development during the 1973-74 school year. The following products are not a detailed listing of all activities and services performed, but

but rather are a selection of the more exemplary illustrations which could serve as transportable models.

Blue Hills District
Braintree and Randolph

- CARD GAME - a device to develop occupational titles from common vocabulary which can be integrated into a teaching unit on suffixes and piloted in Grade 4. Evaluated to be appropriate for instruction with students of at least average reading level.

- WALL HANGINGS - demonstrates a unit relating drawing to scale measurements developed from five LAPs generated from a carpentry BO. This was piloted in Grade 4 and expanded cognitive math concepts into the psychomotor domain.

- LETTER WRITING - a complete individualized programmed instruction package including pre-post tests for Grade 4 teaching in the language arts area, the concepts of headings, sentence structure, paragraph structure and punctuation. The unit is related to the Business Cluster and illustrates specific skills for Clerk Typist, etc. A very impressive and professionally designed product.

- FRACTION BOARD - demonstrates the use of wrenches and fractions. The concept covered the commonality with whole numbers, and materials illustrated the relation of the concept to store clerks, etc.

- OCCUPATIONAL AWARENESS WITH THE TELEPHONE DIRECTORY - a unit demonstrating, through pre-post testing and employing 15 minutes per day for a month, how to increase awareness of occupations located in the community.

- ROLE PLAYING ACTIVITIES - an expansion of commercially produced materials to include coverage of career awareness in PROJECT CAREER's occupations. A sample program has been developed for dissemination to the community and parents.

- MAN'S DISCOVERY AND USE OF TOOLS AS PART OF A SOCIAL STUDIES PROGRAM ON TECHNOLOGY - is a hands-on activity unit to involve children in career awareness.

Springfield

- CONSTRUCTION - this was a comprehensive unit including a model house constructed as a hands-on activity by the class. A full set of teacher-made curriculum materials was prepared related to constructing the model which demonstrates the concepts of vocabulary, science and mathematics.

- CAREER EDUCATION SERIES - a comprehensive set of monographs fully equivalent to any commercially produced materials that clearly and concisely detail What and How To implement various phases of a total Career Education Program.
  - #1 Primary Activities
  - #2 Intermediate Activities - Elementary Schools
  - #3 Audio Visual Aids
  - #4 Games for the Classroom
  - #5 Field Trips - Elementary Schools
  - #6 Language Arts Activities
  - Community Index
  - Career Awareness with PROJECT CAREER

General Overall Field Observations Of The Elementary Pilot Program

The elementary component was a productive program in terms of generating ideas and implementing concepts. Some overall findings were as follows:

1. Career education was not seen as only a supplementary aspect of the core curriculum. Rather, the relation of career development materials to the curriculum, served to integrate an adequate occupational information system directly into every classroom; to relate terminal behaviors in a variety of career cluster areas to skills learned in the early school years that are prerequisite to successful participation in specific jobs; and to motivate students by providing validated information which responds to such questions as, "Why am I learning this?"

2. Career education does not happen accidentally, but needs to be meticulously planned and coordinated by personnel knowledgeable in the concepts of career education. Awareness programs cover a wide range of activities and many audiences. Speakers, field visits, films and activities must be sequential in terms of a student's development, and repetition must be avoided within a school system. Evaluation and maintaining high quality presentations are essential. Expert knowledge in the full range of materials available to a program will contribute to a program's success.

3. In-service education of staff is extremely crucial. The utilization of behavioral objectives requires a high degree of sophistication and involves more knowledge and imagination than the ability to produce or convert curriculum into BO format. In every case, teaching from BO's involved the development of new skills on the teachers' parts and definitely affected their instructional style.

4. The usefulness and meaningfulness of PROJECT CAREER data was judged better when implemented from the four column information. Of the four columns, the prerequisite learning and concept columns were found to be by far the most valuable.

JUNIOR HIGH SCHOOL
CAREER EXPLORATION ACTIVITIES

Blue Hills District - Braintree and Randolph
Piloting of PROJECT CAREER's Ratio and
Proportion Objectives

This was a comprehensive, well planned, experimentally designed and integrated implementation project. It illustrated how a guidance counselor recruited and oriented a teacher for a piloting exercise. The teacher incorporated a fairly large number of PROJECT CAREER BO's into his regular curriculum. The counselor disseminated relevant occupational information in the classroom, planned for speakers to visit the classroom, arranged for field

visits for the pupils into the community, and prepared guidelines for the teacher both to orient students beforehand and to assist students after each visit to examine what they experienced. A total assessment program was developed to evaluate cognitive mastery and attitudinal reactions to specific program features. The experimental vs. control design showed very favorable results for PROJECT CAREER materials and this program. Two eighth grade classes were involved.

Randolph

No materials or program(s) were observed, nor staff or the CIC visited over a two-year period. (Evaluators were in the building on different occasions and had requested to interview all staff personnel). A CIC was set up in a corner of the library.

Milford

- TEACHER ORIENTATION PACKET - This was a series of documents detailing curriculum guides available for career development in Middle Schools, Individual Learning Units, Audio Visual Resources, and career information materials housed in the CIC.
- DECIDING - a locally prepared collection of materials to examine eighth graders' interests, self ratings of personal characteristics and a value clarification exercise.
- COMMUNITY RESOURCE CARD CATALOGUE.

Springfield

- CAREER EDUCATION - The evaluators' opinions of this document is that it represents one of the best curriculum guides observed for a career educator. From the Foreward:

"The purpose of this resource guide is to provide a general conceptual framework and suggested techniques and materials for making the junior high school curriculum more relevant by providing career development experience in all school subjects, as well as in general school experiences including co-curricular activities, student grading, student-teacher relationships, library activities, and school-community activities."

SENIOR HIGH
SKILL DEVELOPMENT

Blue Hills District - Blue Hills Regional Vocational and Technical School and Randolph High School

- STUDENT INVENTORY FILE - This was an excellent monograph which would prove valuable to any career teacher. Topics included a Career Resource Description, Student Interaction Model, Counselor's Outline Introducing Students to Behavioral Objectives, Student Handbook, Pilot Laboratory Instructional Interaction and Evaluative Techniques.

- CAREER CLUSTER CHARTS - Career ladders in Health, Structural Wood, Automotive, Architecture, Business and Graphic Arts.

- A CAREER CACHE KIT (ELECTRONICS) - a model of a disposable occupational information system capable of disseminating information in smaller units than is the typical case, depending upon student interest.

The Blue Hills Regional Vocational-Technical School was not involved with PROJECT CAREER during the 1973-1974 school year.

Milford

- STUDENT FILES - A collection of forms which would be helpful to a person who is just establishing a career information center (CIC).

- CAREER INFORMATION WORKSHOP - A packet of materials which includes a program outline, sample passouts and a workshop simulation exercise.

- OUTLINE FOR THE STUDY OF AN OCCUPATION - This is a very detailed step-by-step process for thoroughly examining all aspects of an occupation.

Springfield

- STUDENT FILE - A folder designed to collect pertinent information from existing school records, provision for bringing the record up to date and comprehensively planned to include interests, aptitudes, abilities and career preferences.

- CAREER PROFILES - Quick, visual aides to display the necessary job requirements for 65 of the PROJECT CAREER occupations.

FACILITIES

High School

In two of the LEA's, Springfield and Milford, the school system set aside a room to house the Career Information Center (CIC), PROJECT CAREER materials and PROJECT CAREER staff. Both of these facilities were very large in size and accomodated large group presentations of materials and multiple student examination and use of materials. One facility was close to the school's Guidance Department, and local PROJECT CAREER staff did have an association with the school's counselors. The other facility was part of a brand new and exciting multi-million dollar, multi-media center. the PROJECT CAREER staff person indicated that no coordination or cooperation existed between the Center and the Guidance Department. The two facilities were considered by the evaluators as not being imaginatively organized to stimulate independent student use. One CIC was considerably better equipped.

Junior High School

In Springfield and Milford, two facilities were being used for housing PROJECT CAREER materials and PROJECT CAREER staff. In comparison to the High School facilities, these two rooms could best be described as being of office size and one being of very small physical size. From evidence of longs, these facilities were utilized considerably by students. Space limited the use to very small groups or individual use. Noting that personnel most often make the difference in a program, the smaller office, through a thoughtful display of materials, showed excellent organization to promote interest for whomever visited the office.

Elementary

No designated physical space was allotted at this level at any LEA.

EQUIPMENT AND MATERIALS

PROJECT CAREER, through its budgetary controls, did not permit, at any level, the expenditure of large sums of monies on equipment. In every LEA, there was a unanimous expression of the need for more materials than the budget provided. It was noted, however, that many materials could be purchased for relatively small dollar amounts and because these materials could be requisitioned easier, not requiring any further authorization, this represented the easiest part of the budget to manage for LEA staff, who generally speaking, had little administrative experience.

Much of the guidance materials examined were those purchased through commercial suppliers and found in most guidance departments. One LEA staff member commented that, "There is an over-emphasis on production of materials which is very time consuming. There are many commercially produced materials around that could meet the same objective of exposure to various jobs that people do." The evaluators concur with this, especially when we consider the training of the personnel involved. ERIC documents were also in evidence.

PROJECT CAREER Workshop Manual - Minimal Requirements of a Career Information Center was inspected and found to be a useful guide. For some LEA staff it perhaps came too late. Knowing the lack of training of some of the LEA staff in this area, PROJECT CAREER should have provided earlier assistance for the development of resource centers. LEA staff felt the need for greater direction in this area, but at the same time were generally proud of their materials, for they reflected visible achievements. Also, since many materials were collected very cheaply or free by the LEA staff themselves, writing letters of request and organizing this information represented a large investment of their time. Our overall evaluation of the occupational information in the resource centers was that it was adequate. LEA's welcomed the added availability of career materials into their schools which would not have been there if they had not become involved with PROJECT CAREER.

Unfortunately, the quality of the early PROJECT CAREER data was very poor and LEA staff were dissatisfied with it. When the quality was satisfactory, its organization was such that its usefulness was not evident. The materials appeared to look like raw data which was not complimentary to the Project. The evaluators sensed that if mock up exemplary samples had been available, they would have created a much better impression than what was observed in the field, and would have been of much greater instructional value.

Following the very frequently stated assessment, "PROJECT CAREER came into the schools too soon," it was not until Spring of 1974 that PROJECT CAREER produced samples of data that would truly communicate PROJECT CAREER's contributions to the educational process. The most impressive piece of data that PROJECT CAREER produced was seen for the first time May 16, 1974, by the Third Party Evaluators - PROJECT CAREER Completed Objectives - Auto Mechanics, dated March 4, 1974. LEA personnel had not seen this document as of early June. Two other samples were: PROJECT CAREER - A Guidance Product - Coding of Friction Concepts "Concepts Request for Milford High School" and "Ratio and Proportion Concepts for Braintree Junior High School". All three of these documents were judged to be excellent vehicles to communicate the value of PROJECT CAREER materials to parents, administrators, the business community, teachers and students.

IMPACT OF MATERIALS
ON TEACHERS AND STUDENTS

Articulation of the presence of career materials and exposure of students to them would have to be considered one of the positive values demonstrating PROJECT CAREER/GUIDANCE's impact on the LEA's. But, again, a great deal of variability occurred in each LEA. Where figures are cited, they are 1973-1974 statistics. In-service education of teachers in the use of PROJECT CAREER materials or instruction of students in the use of PROJECT CAREER data could not be said to have truly occurred.

High School

In Milford, two thirds of the student population were exposed to the Career Resource Center by either the PROJECT CAREER staffer visiting classrooms or classes of students (10) with their teachers visiting the Center where a formal presentation was made. At least one teacher in each academic department was instructed informally about the Center. A well prepared publication, Description of Milford's Career Information Center also served a useful function. PROJECT CAREER/GUIDANCE materials were never seen by Milford students.

In Springfield the log showed 386 persons used the Career Information Center (CIC) in a school with a 1400 student population. There was little use of the CIC by teachers and little in the way of public relations to stimulate interest in the Center.

Junior High School

In Milford, career information was presented to every eighth grader, and classes were visited by the PROJECT CAREER staff person. The CIC director stated she was at a distinct disadvantage in disseminating information because no PROJECT CAREER pilot activities were conducted in her school. An in-service educational program for teachers was conducted.

In Springfield, there was a very active program of dissemination reflecting obvious coordination with teachers and administrators. From September to May, 620 students used the CIC, 40 students were involved with a University of Massachusetts engineering program, 350 students participated in field trips, 525 students heard classroom presentations, 200 students visited a vocational school, and 280 students were involved in exploring various community resources.

Elementary

Because most of the elementary programs were conducted as special or individual projects with single classroom groups, no meaningful data exists for assessing impact. One of the Braintree team members conducted an in-service educational program for teachers but she was hampered in her presentation by the lack of PROJECT CAREER data. Springfield impacted the entire system through the dissemination of its Career Education Series to all teachers.

GENERAL SUMMARY
OF FINDINGS

1. Certain specific transportable materials were developed, in the sense that they were materials that could be utilized in a career awareness or career exploration program in other places.

2. The fully developed relationship between the learning of skills in the classroom, making of career decisions through the use of computerized student files, and the availability of complete and systematized PROJECT CAREER data for tying the two together, never materialized. The PROJECT CAREER data was never complete. The pilot operations never had a chance to develop fully enough to enable that objective to be met.

3. Materials and activities were developed that impacted on the facilitation of student placement. However, this objective was too far ahead of where the Project could go in the time it had and with the constraints placed on it by lack of data.

4. Most of the specific elements in most of the objectives listed at the beginning of this section, were implemented to some extent in nearly all the pilot schools. The list of the most outstanding examples of these aforementioned outputs are representative of this attainment. Any one of these examples by itself can represent a significant accomplishment of quality and value in a career guidance/career development program.

Perhaps one of the major failures of the Project, one that could have been avoided with more forceful direction from the

Central Staff, was the lack of any siginficant inter-LEA cooperation and coordination. Each LEA functioned essentially independently of the others, and there was little, if any, sharing of developments and activities from one LEA to the other, although the central staff did try to promote this sharing. This certainly minimized some of the potential benefits that could have accrued from information sharing, and perhaps also limited the potential transportability of what was actually developed.

These findings, of course, are stated in relation to the Project objectives. These were ambitious objectives and the evaluators do not want to leave the impression that the accomplishments were without significance. We feel that most of the descriptive findings above speak for themselves as evidence of the significant and useful accomplishments in career education for the LEA's in this pilot project.

IX. PROJECT DISSEMINATION

From August of 1971, to April of 1974, PROJECT CAREER/GUIDANCE was active in disseminating information about the Project. While it is true that dissemination, in itself, does not guarantee utilization of the information, at least it is a step toward greater utilization of already learned knowledges. Too often the knowledge learned in one Project is never disseminated or transported to another, hence its basic importance is diminished.

Fortunately, PROJECT CAREER/GUIDANCE has seized every opportunity to disseminate information. It is hoped that a large number of articles will soon be added to the many and varied kinds of dissemination already in effect. The following is a partial listing of presentations by PROJECT CAREER/GUIDANCE personnel. For a complete listing of PROJECT CAREER/GUIDANCE presentations, see Appendix, page A-2.

- August 24, 1971 - Presentation to Bureau of Labor Statistics, J.F.K. Building, Boston, MA. - PROJECT CAREER AND INTERFACE WITH MANPOWER PROJECTIONS.
- September 22, 1971 - Educational Testing Service (ETS), Princeton, New Jersy - PROJECT CAREER AND POSSIBILITIES FOR A COLLECTION SERVICE OF PERFORMANCE OBJECTIVES.
- November 22 and 24, 1971 - Concord Reformatory, Educational Division - PROJECT CAREER AS A MODEL FOR INMATE TRAINING PROGRAM
- January 31, 1972 - Newton Public School, Newton, MA. - PROJECT CAREER - L.E.A. SELECTION PRESENTATION.

- March 29, 1972 - University of Massachusetts, Waltham Field Station - DISTRIBUTIVE AND EDUCATION CAREER DEVELOPMENT PRESENTATION.

- April 7, 1972 - Framingham State Teachers College - CONFERENCE ON CAREER EDUCATION: PROJECT CAREER AS A MODEL FOR CAREER DEVELOPMENT.

- May 24, 1972 - Hingham Public Schools, Hingham, MA., Guidance Department - PRESENTATION ON PROJECT CAREER COMPUTERIZED DATA TO ASSIST GUIDANCE AND COUNSELING.

- October 31, 1972 - Hopedale Region Guidance Meeting, Hopedale, MA. - PROJECT CAREER DATA FOR COUNSELORS.

- April 27, 1973 - M.P.G.A. Career Education Workshop, Barry Science Pavillion, Newton College, Newton, MA. - IMPLICATIONS OF PROJECT CAREER DATA FOR CAREER COUNSELORS, STUDENTS, TEACHERS.

- April 2, 1974 - Bridgewater State Teachers College, Bridgewater, MA. - COURSE ON INNOVATIVE PRACTICES IN ADMINISTRATION - PRESENTATION ON PROJECT CAREER COMPUTERIZED DATA.

X. RECOMMENDATIONS

On the assumption that there might be a further extension or development of PROJECT CAREER/GUIDANCE, and in view of the findings summarized on page 47, the Third Party Evaluators recommend the following:

1. That any further pilot testing of guidance related objectives be established on a carefully articulated and coordinated K-12 basis within the same school system.

2. That a total, integrated, transportable model be developed for utilizing PROJECT CAREER data for career awareness and career development programs in school systems.

3. That further attention be given to the development of the model of computerized student inventory files, integrating classroom skill development with career decision making.

4. That the Project make a careful review and evaluation of all the activities and materials developed during the funding period, and identify those that are ready to be shared with other school systems, and those that warrant further development and implementation as part of a career guidance program.

XI. COST EFFECTIVENESS

Cost effectiveness considerations may be encompassed by three basic questions:

1. What proportion of the resources were actually used to accomplish the objectives?

2. What were the overall finite costs in relation to the objectives accomplished (outputs)?

3. Were there alternative ways to accomplish the objectives that would have been more cost effective?

In order for evaluators to provide meaningful answers to any of these questions, at least two kinds of information are necessary:

- A program budget containing dollar amounts related to specific Project objectives.

- Accurate and complete fiscal information relating disbursements to objectives as well as line items.

Neither of these conditions was met by any component of PROJECT CAREER, with the exception of PROJECT CAREER/CAN which had a program budget.

There was an effort made during the last months of the CAREER/GUIDANCE project to institute budgeting by objectives for expenditures in each of the pilot LEA's. These budgets and related objectives were developed by the LEA's and submitted to the Project Administrator for approval. Disbursements were made based on the attainment of or contribution to the attainment of the local objectives. However, this constituted only a local arrangement with a

rather small proportion of the total funds expended by PROJECT CAREER. Moreover, the records necessary to monitor these disbursements were not summarized and would have required a "mini-audit" of requisition forms. In any case, the Third Party Evaluators want to commend the Project Administrator for this effort at instituting a more cost effective system.

Another difficulty with determining cost effectiveness for any specific component of PROJECT CAREER is the obvious fact that resources were interdependent such that it was impossible to separate out the effect of funding from one source from the effect on the same objective from another source. Central staff personnel seldom had single assignments that focused 100% of their time on one objective for one Project component. Two examples will illustrate this fact.

The administrator of CAREER/HANDICAPPED devoted half or more of his time (variable at different stages of the Project) to activities that were related to the data development objectives of CAREER/DEVELOPMENT, yet his total salary was funded by CAREER/HANDICAPPED. The Curriculum Administrator for PROJECT CAREER was paid from CAREER/DEVELOPMENT funds, yet a major portion of his time was devoted to administering and directing the pilot activities associated with CAREER/GUIDANCE, and most of the last year of his work on data development was devoted to four column writing which was a funded objective under CAREER/CAN.

These problems of allocating resources to specific Projects with particularized objectives become even more complicated when we consider resources going into supplies, equipment rental, administrative costs, etc. As we pointed out, neither the fiscal records nor the budgets enabled any meaningful distinctions to be made in allocating resources.

Such data on expenditures as was available to the evaluators in summary form (apart from actual vouchers and requisitions) consisted of two categories:

1. An auditor's report on expenditures for all components of PROJECT CAREER from July 1, 1971 through March 19, 1973.

2. Bi-weekly fiscal reports from the accountant for all components based on a fiscal 1974 budget. The latest of these reports, dated June 18, 1974 formed the basis for final figures on Project expenditures.

We reported elsewhere on the fiscal management difficulties that beset the Project during its first two years. The auditor's report, dated June 22, 1973, contains the following statement: "At the Project office, internal control of expenditures, proper classification of charges, communication of financial data to Regional School business office, and audit trail of financial transactions to the accounting records was inadequate in many respects. These deficiencies are noted below through recommendations for improvement of the accounting system."

The improvements were implemented by late April, 1973, but there was still a lack of budgeting and disbursement by objectives

and over $600,000 had already been spent. Thus, tracing the effect of money spent during the first two fiscal years of PROJECT CAREER became almost impossible. An illustration of this problem can be made for CAREER/GUIDANCE.

According to the June 1973 auditor's report, $112,003 was expended from the CAREER/GUIDANCE budget through March 19, 1973. However, when the new line item budget for fiscal 1974 was drawn up and bi-weekly reports begun, the CAREER/GUIDANCE budget was drawn on the basis of the total funding for this Project from its inception in July, 1972. Expenditures from the months preceding fiscal 1974 were reallocated, apparently, to take account of the fact that this budget had been tapped for funds needed by other components, but which had not been available to PROJECT CAREER when expenditures were due. Thus, the audit shows almost $66,000 expended for personnel at the Central Staff level, but the final CAREER/GUIDANCE budget accounts for only $34,000 to Central Staff personnel. Thus, any spending prior to the last fiscal year of this Project cannot be accurately accounted for in relation to progress on attaining the objectives of this Project.

In the opinion of the Third Party Evaluators, the funding agencies are as much to blame for this state of affairs as is the Project administration. For some reason, the funding agencies did not insist on a program budget at the time the proposals were made

or as a condition for the release of funds. (The exception to this was PROJECT CAREER/CAN).

This leaves only the possibility of the most gross estimates of cost effectiveness. For this purpose we have combined information on expenditures for all components of PROJECT CAREER into one chart, Figure 1. We have, in turn, lumped all objectives into two categories, 1) data development and 2) pilot activity. We have further arbitrarily assigned all expenditures for personnel, supplies, etc., that were essentially made at the Central Staff level to the objective of data development. Under data development we include the completion of 8-part objectives (condition, performance, extent, prerequisite skills, component tasks, alternative environments, concepts, handicapped code) for 116 occupations and all necessary computer time, programming, and output. This arrangement also assumes that 100% of the time of staff was going into data development, an assumption that is obviously not true. We then identified all the funds that were expended directly to or for LEA personnel and their travel expenses. This money we assumed represented the contribution of resources to the pilot activity. This assumption is also not true since a portion of supplies, equipment, rental, administrative costs, etc. can certainly be assigned to piloting. In the absence of any other basis for sorting out these costs, however, we have made this gross allocation.

Figure 1

PROJECT CAREER EXPENDITURES THROUGH JUNE 18, 1974

EXPENDITURES ONLY

	CAREER DEVELOP-MENT 71-72	CAREER DEVELOP-MENT 72-73	CAREER DEVELOP-MENT 73-74	CAREER DEVELOP-MENT Total	CAREER HANDI-CAPPED 72-73	CAREER HANDI-CAPPED 73-74	CAREER HANDI-CAPPED Total	CAREER GUIDANCE 72-74	CAREER CAN 73-74	TOTAL ALL FUNDING
1. TOTAL BUDGETED	154,857	199,908	223,110	577,875	255,042	166,366	421,408	194,120	207,512	1,400,915
2. TOTAL EXPENDED	154,857	160,764	216,554	532,175	140,524	119,636	260,160	181,437	149,680	1,123,452
3. PERSONNEL	113,345	119,606	145,794	378,745	75,061	59,619	134,680	34,349	111,305	659,079
4. SUPPLIES, EQUIPMENT, ETC.	41,512	41,158	56,623	139,293	18,018	33,374	51,392	34,596	38,375	263,656
5. DATA DEVELOPMENT, #3, #4	154,857	160,764	202,417	518,038	93,079	92,993	186,072	68,945	149,680	922,735
6. LEA SALARIES AND TRAVEL	———	———	14,137	14,137	47,445	26,643	74,088	112,492	———	200,717
7. PILOT TESTING, #6	———	———	14,137	14,137	47,445	26,643	74,088	112,492	———	200,717

As can be seen from the chart, the bulk of funding for data development came from PROJECT CAREER/DEVELOPMENT and PROJECT CAREER/CAN. Major funding for piloting came from PROJECT CAREER/HANDICAPPED and PROJECT CAREER/GUIDANCE. Of the total $1,123,452 expended by the Project through June 18, 1974, nearly $923,000 went to data development and a little more than $200,000 went to piloting.

COST EFFECTIVENESS QUESTIONS

What proportion of PROJECT CAREER resources were used to accomplish the objectives of all Project components? In studying all the reports on expended funds that were available to us, we must conclude that there is no evidence to suggest that any part of the resources of this Project were spent for other than the attainment of Project objectives. The failure to budget by objectives makes it impossible to identify where or to what extent this conclusion might not be true. There is other evidence discussed below, however, that indicates not all the pilot test resources went into the specific objective of testing the data.

What were the overall finite costs in relation to Project objectives or Project output? We can say from our gross figures that it cost over $900,000 to develop a data bank that we estimate to be about 90% complete in the form originally proposed when the Project was funded in July, 1971. The original funding proposal, in which the development of this data bank was proposed for

completion over the three year period, was funded to the extent of $577,875. Over $400,000 had been spent on data development from all funding sources by the end of fiscal 1973 (two years into the three year funding period). At that time the data bank included about 550 completed objectives. There were also several thousand objectives at various other stages of the data development system. Also at this time the Project was working with the explicit target of 50,000 objectives in the data bank. In the opinion of the evaluators this was never a realistic figure and should be essentially discounted in looking at the accomplishments of the Project and the issue of cost effectiveness. But, from the point of view of the stated objectives of the Project, the figure was there and certainly created an enormous gap between production and target.

During the last twelve months of the Project, about $150,000 in new development money was spent from PROJECT CAREER/CAN. This was added to about $200,000 of remaining data development in CAREER/DEVELOPMENT and another $100,000 drawn from CAREER/HANDICAPPED and CAREER/GUIDANCE. So, by our gross figures, about another $450,000 went into data development during the last fiscal year of the Project. The results were the addition of about 9,000 more completed BO's for the data bank and an additional three to four thousand BO's in the system needed to complete all 116 occupations.

Was PROJECT CAREER cost effective in producing this data bank of completed behavioral objectives? The answer is probably "yes and no". We can say that the data bank was completed as promised in three years and that it cost approximately $923,000 of a total budget from all sources of $1,400,915. That is probably acceptable for a research and development project breaking new curricular territory to develop a product that will be nationally transportable with high potential impact on users and student consumers.

On the other hand, the proposal to develop this product was funded for $577,875 for a three year period and some of those resources had to be used to secure nearly $400,000 more dollars in order to complete the data. It did, in fact, require two years and $400,000 to learn how to produce a product that would have reasonable quality and be useful for instruction. A similar amount of money ($450,000) and one more year, was then required to complete the data bank for about all 116 occupations on the PROJECT CAREER list.

For any reasonably definitive answer to the cost effectiveness of this Project we must turn to our final question. Were there better ways to accomplish the objectives that would have been more cost effective? To this question, the evaluators believe the answer is a qualified yes. In this context we must look at the second of the two major objectives, the pilot testing of the product.

Our gross figures indicate that about $200,000 was spent over a two year period to pilot test the usefulness of the data. Were the data ever pilot tested? The answer to this question is essentially no. Classroom use of the data was limited to two occupational classrooms using incomplete data for two occupational clusters (electronics and business). No data bank with any of the computer retrieval possibilities was ever available for piloting. Data was never available in the form and quantity needed to effectively test its use in guidance. Coded data for handicapped populations was never available in the quantity and quality needed for an adequate test.

The undenied accomplishments of the pilot program in the three LEA's and the enthusiasm for the potential of the product (the feasibility of which was certainly tested), cannot obscure the fact that the data were never adequately ready for the testing that was to take place. We can say, then, that most of the resources going into the pilot programs were not focused on the essential objective of testing the usefulness of the product for guidance, for the secondary classroom, and for handicapped populations.

This problem, moreover, was extended to the data development process. Pilots that had no data had to be kept going on some basis. We have no way of knowing, however, to what extent data development resources were wasted by the poor timing of the pilot programs.

We do know that the funding sources that produced money for the pilot test also added resources available for data development. Were the exigencies of proposal writing and the requirements of the funding agencies such that to get more money for data development piloting had to be included? The answer to this question is probably yes.

SUMMARY

In closing, we want to emphasize that the start up costs of a project of this magnitude are bound to be high. In our judgment the costs of this Project were fully warranted in relation to the innovations developed. By concentrating these funds on one project, a process and a product have been developed that can now be duplicated by local school systems throughout the country at a small fraction of these original development costs.

XII. CONCLUSION

As we have previously mentioned, this Project was handicapped by the lack of complete data from the parent project with which to implement the guidance use intended by the Project objectives. Despite this problem, however, the Project did succeed in developing and implementing at all levels, on a limited scale, a number of excellent materials and activities that were relevant to PROJECT CAREER and the eventual availability of the PROJECT CAREER data bank.

A P P E N D I X

PROJECT CAREER/GUIDANCE FOOTNOTES

1. PROJECT CAREER Comprehensive Project Plan, September 1, 1972, page 1

2. Ibid, pp. 1-2

3. Ibid, page 2

4. PROJECT CAREER in Motion Addendum, June, 1973

5. Comprehensive Project Plan, Page 46

6. PROJECT CAREER in Motion

7. Ibid

8. Ibid

Project CAREER/Guidance Presentations
July 1, 1971 - June 30, 1974

August 24, 1971

Presentation to Bureau of Labor Statistics, J.F.K. Building, Boston, Mass.

"Project CAREER and Interface with Manpower Projections"

August 26, 1971

Evaluation Service Center for Occupational Education (E.S.C.O.E.)

"Project CAREER and Developing Performance Objectives"

September 22, 1971

Educational Testing Service (ETS), Princeton, New Jersey.

Presentation on "Project CAREER and Possibilities for a Collection Service of Performance Objectives"

September 23, 1971

American Institutes for Research, Bedford, Massachusetts.

Presentation on "Project CAREER and Validation of a Systems Approach for Objectives"

September 24, 1971

Dighton-Rehoboth

Presentation to Superintendent, Mr. Robert Roy, and staff on "Project CAREER Computerized Data"

October 30, 1971

Massachusetts Personnel and Guidance Association.

Workshop on Career Education - Bently College - Braintree

November 12, 1971

Boston Public School System, Department of Special Needs.

"Needs Analysis Presentation"

November 22 and 24, 1971

Concord Reformatory, Educational Division.

Presentation of "Project CAREER as a Model for Inmate Training Program"

November 23, 1971

Whitman Kiwanis Club, Ridders Country Club, Whitman, Massachusetts.

"Project CAREER as a Curriculum Model"

December 1, 1971

Brockton Public Schools, Brockton, Massachusetts.

Project CAREER presentation

December 2, 1971

New England Resource Center for Occupational Education (N.E.R.C.O.E.)

Project CAREER presentation

December 14, 1971

Dr. Hershel Thomas and staff at Massachusetts Department of Corrections.

"Project CAREER as an Institutional Model"

January 27, 1972

Freetown-Lakeville Regional Vocational School

Project CAREER L.E.A Selection Presentation

January 28, 1972

Milford Public School, Milford, Massachusetts

Project CAREER - L.E.A. Selection Presentation

January 31, 1972

Newton Public School, Newton, Massachusetts

Project CAREER - L.E.A. Selection Presentation

February 1, 1972

Stoneham Public School, Stoneham, Massachusetts

Project CAREER - L.E.A. Selection Presentation

Feburary 3, 1972

Springfield Public Schools, Springfield, Massachusetts

Project CAREER - L.E.A. Selection Presentation

February 7, 1972

Brockton Public Schools, Brockton, Massachusetts

Project CAREER - L.E.A. Selection Presentation

February 16, 1972

Framingham Womens' Reformatory Department of Correction

Project CAREER Presentation

March 29, 1972

University of Massachusetts, Waltham Field Station

Distributive and Education Career Development Presentation

April 7, 1972

Framingham State Teachers College

Conference on Career Education: Project CAREER as a Model for Career Development

April 28, 1972

New Hampshire Vocational Association

Conference on Career Education: Margate Motor Inn, Laconia, New Hampshire "Project CAREER Process and Instructional Models"

May 4, 1972

Blue Hills Regional Vocational-Technical School: State Coordinators for Special Needs

Project CAREER Presentation

May 9, 1972

M.P.G.A. Conference, Amherst, Massachusetts

Project CAREER Presentation

May 11, 1972

Division of Curriculum and Instruction, Dr. Max Bogart, Associate Commissioner

Project CAREER Process and Component Project

May 24, 1972

Hingham Public Schools, Hingham, Massachusetts, Guidance Department

Presentation on Project CAREER Computerized Data to assist Guidance and Counseling

Western Massachusetts Personnel and Guidance Association, Conference on Career Education

Presentation on Project CAREER

October 31, 1972

Hopedale Region Guidance Meeting, Hopedale, Massachusetts

Project CAREER Data for Counselors

November 6, 1972

Department of Labor, Mr. Leon Lewis, Bureau of Labor Statistics, Washington, D.C.

Project CAREER Data

November 17, 1972

Norwalk Public Schools, Norwalk, Center, Dr. James Medved

Project CAREER Data Presentation

April 27, 1973

M.P.G.A. Career Education Workshop, Barry Science Pavillion, Newton College, Newton, Massachusetts

"Implications of Project CAREER Data for Career Counsellors, Students, Teachers"

June 6, 1973

Duxbury Committee for Vocational Education, Duxbury, Massachusetts

"Project CAREER Process and Career Development Models"

September 13, 1973

Laselle Junior College, Nursing Staff, Newton, Massachusetts

"Project CAREER Computerized Data"

November 5, 1973

Essex Agricultural School, Hawthorne, Massachusetts, Mr. James Gallant, Director

"Project CAREER Computerized Data"

November 6, 1973

Southeast Regional Vocational-Technical School, Easton, Massachusetts, Mr. Donald Graves, Director

"Project CAREER Computerized Data"

November 8, 1973

South Shore Regional Vocational-Technical School, Mr. Frederick Teed, Director, Hanover, Massachusetts

"Project CAREER Computerized Data"

November 14, 1973

Nashova Valley Regional Vocational-Technical School, Mr. Thomas Lafionnatis, Director, Westford, Massachusetts

"Project CAREER Computerized Data"

February 6, 1974

Milton Public Schools, Milton, Massachusetts

"Career Awareness Presentation"

April 2, 1974

Bridgewater State Teachers College, Bridgewater, Massachusetts

Course on Innovative Practices in Administration - Presentation on "Project CAREER Computerized Data"